

## INTERNATIONAL SEARCH REPORT

 International Application No  
 PCT/FI 03/00456

 A. CLASSIFICATION OF SUBJECT MATTER  
 IPC 7 B65H18/14 B65H18/26 //B65H18/20

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 335 871 A (FISSMANN HANS-JOACHIM ET AL) 9 August 1994 (1994-08-09) column 1, line 37 - line 53 column 4, line 22 - column 5, line 1; figures	1-7
A	US 4 598 877 A (OINONEN HANNU) 8 July 1986 (1986-07-08) the whole document	1-7
A	US 5 758 842 A (DORFEL GERHARD W ET AL) 2 June 1998 (1998-06-02) the whole document	1-7
A	US 4 465 243 A (WELP EWALD G) 14 August 1984 (1984-08-14) the whole document	1-7
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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

8 September 2003

Date of mailing of the international search report

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>US 5 562 261 A (BEISSWANGER RUDOLF ET AL)  8 October 1996 (1996-10-08)  the whole document  -----</p>	1-7

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No  
PCT/FI 03/00456

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5335871	A	09-08-1994	AT 194583 T CA 2092462 A1 DE 9204667 U1 DE 59310072 D1 EP 0562266 A1 EP 0957052 A2 FI 931096 A JP 2908171 B2 JP 6115771 A	15-07-2000 27-09-1993 06-08-1992 17-08-2000 29-09-1993 17-11-1999 27-09-1993 21-06-1999 26-04-1994
US 4598877	A	08-07-1986	FI 841448 A AT 395843 B AT 93085 A AU 574450 B2 AU 4038585 A CA 1249805 A1 DE 3512268 A1 FR 2562879 A1 GB 2157273 A ,B NO 851381 A SE 456083 B SE 8501741 A	12-10-1985 25-03-1993 15-08-1992 07-07-1988 17-10-1985 07-02-1989 02-01-1986 18-10-1985 23-10-1985 14-10-1985 05-09-1988 12-10-1985
US 5758842	A	02-06-1998	DE 9317616 U1 AT 182315 T BR 9408070 A CA 2176957 A1 DE 59408528 D1 WO 9513980 A1 EP 0729432 A1 ES 2135687 T3 FI 962096 A JP 2762316 B2 JP 9502686 T PL 314291 A1	16-03-1995 15-08-1999 24-12-1996 26-05-1995 26-08-1999 26-05-1995 04-09-1996 01-11-1999 17-05-1996 04-06-1998 18-03-1997 02-09-1996
US 4465243	A	14-08-1984	DE 3121039 A1 BR 8201686 A CA 1171832 A1 ES 8304015 A1 FI 69818 B FR 2506737 A1 IT 1149629 B JP 1926309 C JP 6041334 B JP 57199746 A	23-12-1982 16-02-1983 31-07-1984 16-05-1983 31-12-1985 03-12-1982 03-12-1986 25-04-1995 01-06-1994 07-12-1982
US 5562261	A	08-10-1996	DE 4402624 A1 DE 4419662 A1 AT 168351 T CA 2141467 A1 DE 59406454 D1 EP 0665178 A2 ES 2119057 T3 FI 946001 A JP 8259057 A NO 950340 A	23-06-1994 03-08-1995 15-08-1998 01-08-1995 20-08-1998 02-08-1995 01-10-1998 01-08-1995 08-10-1996 01-08-1995